



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

September 30, 2004

Bruce Wolfe  
Executive Officer  
California Regional Water Quality Control Board  
San Francisco Bay Region  
1515 Clay Street, Suite 1400  
Oakland, CA 94612

**Re: Five-Year Review Report for the Fairchild Semiconductor Corp. Superfund Site,  
San Jose, CA**


Dear Mr. Wolfe:

The U.S. Environmental Protection Agency, Region 9 (EPA) has reviewed the third Five-Year Review Report for the Fairchild Semiconductor Corp. San Jose Superfund site, prepared by the California Regional Water Quality Control Board, San Francisco Bay Region, dated September 30, 2004. This Five-Year Review was conducted as a matter of EPA policy because cleanup of the site will take five years or more to complete (see OSWER No. 9355.7-03B-P, *Comprehensive Five-Year Review Guidance*, June 2001). The review addresses remedial actions taken pursuant to the March, 1989 Record of Decision for the site.

EPA concurs that the groundwater remedy for the Fairchild San Jose site currently protects human health and the environment because institutional controls are in place that prohibit the use of shallow groundwater. In order for the remedy to be protective in the long term, remedial action objectives for groundwater must be achieved. While the potential for human health risk associated with vapor intrusion appears to be minimal, assessment of the vapor intrusion pathway is not complete. Therefore, USEPA and the RWQCB are deferring making a protectiveness statement regarding vapor intrusion until an analysis of risks from this pathway is complete. The next Five-Year Review for the Fairchild San Jose site will be due on September 30, 2009.

EPA appreciates the opportunity to work with you on this report. If you have any questions, please feel free to contact Debbie Schechter of my staff at 415-972-3230.

Sincerely,

  
Elizabeth Adams, Chief  
Site Cleanup Branch  
Superfund Division



# California Regional Water Quality Control Board

## San Francisco Bay Region

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**Terry Tamminen**  
*Secretary for  
Environmental  
Protection*

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**Arnold Schwarzenegger**  
*Governor*

Date: September 30, 2004  
File No. 43S0036

Ms. Elizabeth Adams  
Chief, Site Cleanup Branch  
Superfund Division  
U.S. EPA Region 9  
75 Hawthorne Street  
San Francisco, CA 94105

SUBJECT: Submittal of Five-Year CERCLA Review for Fairchild Semiconductors San Jose  
Superfund Site, San Jose, Santa Clara County, California.

Dear Ms. Adams:

Enclosed for your records and review is a copy of the Five-Year Review for the Fairchild Semiconductors Superfund Site at 101 Bernal Road in San Jose.

If you have any questions please contact Keith Roberson of my staff at 510 622 2404 or email [ker@rb2.swrcb.ca.gov](mailto:ker@rb2.swrcb.ca.gov).

Sincerely,

Bruce H. Wolfe  
Executive Office



**California Regional Water Quality Control Board  
San Francisco Bay Region**

**Five-Year Review**

**Fairchild-San Jose Site  
101 Bernal Road  
San Jose, Santa Clara County, California**

**Report Approved by: \_\_\_\_\_**

**Stephen A. Hill  
Chief, Toxics Cleanup Division  
California Regional Water Quality Control Board  
San Francisco Bay Region**

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### **List of Acronyms**

ARAR	Applicable or Relevant and Appropriate Requirements
bgs	Below Ground Surface
BPHE	Baseline Public Health Evaluation
DCE	dichloroethene
ESL	Environmental Screening Levels
FRAP	Final Remedial Action Plan
GWET	Groundwater extraction and treatment
MSCA	Multi-State Cooperative Agreement
MCL	Maximum Contaminant Level
ug/L	micrograms per liter
NPDES	National Pollutant Discharge Elimination System
NPL	National Priorities List
PCE	tetrachloroethene
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RWQCB	Regional Water Quality Control Board
SCR	Site Cleanup Requirements
SVET	Soil Vapor Extraction and Treatment
TCA	1,1,1-trichloroethane
TCE	trichloroethene
USEPA	United States Environmental Protection Agency
VC	Vinyl chloride
VOC	Volatile Organic Compound

## **Executive Summary**

The remedy for groundwater contamination at the Fairchild – San Jose Superfund site at 101 Bernal Road in San Jose, California, has included soil excavation, construction of a slurry cut-off wall encompassing the site, groundwater extraction and treatment (GWET), soil vapor extraction and treatment (SVET), groundwater monitoring, and institutional controls. This is the third five-year review for the Fairchild – San Jose site, and it covers remedial activities conducted between February 1999 and February 2004.

Remedial actions conducted at the site have achieved success. There is no longer an offsite groundwater plume, as contaminant concentrations at all monitoring points outside the site boundary have been below drinking water standards for ten years. Site cleanup goals have not been achieved for all chemicals of concern within the site boundaries, but concentrations inside the slurry cut-off wall at the site have been reduced to levels that no longer pose any human health risk. Groundwater extraction was suspended in 1998, and no remediation has been performed at the site since that time. The remedy is currently protective of human health and the environment in terms of limiting ingestion of contaminated water through the use of institutional controls prohibiting the use of shallow groundwater.

Indoor air has not been sampled at the site. Although risks associated with vapor intrusion appear to be minimal, RWQCB and USEPA are deferring making a protectiveness statement until an analysis of the risks at this site from the vapor intrusion pathway have been considered further.

<b>Five-Year Review Summary Form</b>		
<b>SITE IDENTIFICATION</b>		
<b>Site Name</b> (from WasteLAN): <b>Fairchild Semiconductor Corp., South San Jose</b>		
<b>EPA ID</b> (from WasteLAN): <b>CAD097012298</b>		
<b>Region:</b> <b>9</b>	<b>State:</b> <b>CA</b>	<b>City/County:</b> <b>San Jose/Santa Clara</b>
<b>SITE STATUS</b>		
<b>NPL status:</b> <b>Final</b>		
<b>Remediation Status:</b> <b>Suspended</b>		
<b>Multiple OUs?</b> <b>No</b>	<b>Construction completion date:</b> <b>1987</b>	
<b>Has site been put into reuse?</b> <b>The site was redeveloped into a shopping center during 1998 - 2000 .</b>		
<b>REVIEW STATUS</b>		
<b>Lead agency:</b> <b>State of California</b>		
<b>Author Name:</b> <b>Keith Roberson</b>		
<b>Author title:</b> <b>Engineering Geologist</b>	<b>Author affiliation:</b> <b>CA Regional Water Quality Control Board (Lead Agency)</b>	
<b>Review period:</b> <b>February 1999 to February 2004</b>		
<b>Date(s) of site inspection:</b> <b>9/01/04</b>		
<b>Type of Review:</b> (in bold) <input type="checkbox"/> Post-Sara <input type="checkbox"/> Pre-Sara <input type="checkbox"/> NPL-Removal only <input type="checkbox"/> Non-NPL Remedial Action Site <input checked="" type="checkbox"/> <b>NPL State/Tribe-lead</b> <input type="checkbox"/> Regional Discretion		
<b>Review number:</b> (in bold) <input type="checkbox"/> 1 (first) <input checked="" type="checkbox"/> 2 (second) <input checked="" type="checkbox"/> <b>3 (third)</b> Other (specify)		
<b>Triggering action:</b> (in bold) <input type="checkbox"/> Actual RA Onsite Construction at OU#____ <input type="checkbox"/> Actual RA Start at OU#____ <input type="checkbox"/> Construction Completion <input checked="" type="checkbox"/> <b>Previous Five-Year Review Report</b> <input type="checkbox"/> Other (specify)		
<b>Triggering action date</b> (from WasteLAN): <b>9/30/1999</b>		
<b>Due Date:</b> <b>9/30/2004</b>		

### Five-Year Review Summary Form, continued

**Issues:**

Indoor air VOC concentrations have not been monitored at the site. While the potential for human health risk associated with vapor intrusion appears to be minimal, assessment of the vapor intrusion threat is not complete.

**Recommendations and Follow-up Actions:**

RWQCB and USEPA need to further evaluate the vapor intrusion pathway and determine if additional site investigation and risk assessment is necessary.

**Protectiveness Statement:**

Remedial actions conducted at the site have greatly reduced contaminant mass and groundwater concentrations. There is no longer an offsite groundwater plume, as contaminant concentrations at all monitoring points outside the site boundary have been below drinking water standards for ten years. Site cleanup goals have not been achieved for all chemicals of concern within the site boundaries, but concentrations inside the slurry cut-off wall at the site have been reduced to levels that no longer pose any human health risk. Groundwater extraction was suspended in 1998, and no remediation has been performed at the site since that time. The remedy is currently protective of human health and the environment in terms of limiting ingestion of contaminated water through the use of institutional controls prohibiting the use of shallow groundwater.

Indoor air has not been sampled at the site. Although risks associated with vapor intrusion are expected to be minimal, RWQCB and USEPA are deferring making a protectiveness statement until an analysis of the risks at this site from the vapor intrusion pathway have been considered further.



**California Regional Water Quality Control Board  
San Francisco Bay Region**

**Five-Year Review**

**Fairchild Semiconductors-San Jose Site  
101 Bernal Road  
San Jose, Santa Clara County, California**

**I. Introduction**

This report is the third five-year review for the former Fairchild Semiconductors (Fairchild) site at 101 Bernal Road in south San Jose, Santa Clara County, California. The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB), conducted this review pursuant to the Multi-Site Cooperative Agreement (MSCA) between the U.S. EPA Region 9 (USEPA) and the RWQCB. The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. The five-year review is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

**II. Site Chronology**

Fairchild begins electronics manufacturing at the site	1977
Initial investigations identify leaking underground waste solvent storage tank and associated soil and groundwater contamination	Nov – Dec 1981
Great Oaks Water Company public supply well GO-13 found to contain 1,1,1-TCA and taken out of service	Dec 1981
Fairchild begins groundwater extraction	1982
Fairchild stops industrial operations at the site	1983
Slurry cut-off wall constructed to contain on-site contamination	1986
RWQCB issues initial interim Site Cleanup Requirements Order 86-62	Aug 1986
Schlumberger sells Fairchild Corp. but retains responsibility for site cleanup	1987
Public Health Assessment completed for site	1988
Fairchild San Jose site added to the National Priorities List	1989
USEPA issues Record of Decision (ROD)	Mar 1989
Fairchild terminates groundwater extraction from “C” aquifer	1989
RWQCB adopts Final Site Cleanup Requirements Order 89-16	Jan 1989
Schlumberger sells site to SRDC, Inc.	1990
Fairchild terminates off-site pumping	Dec 1991
Fairchild submits first Five-Year Review Report to RWQCB	Feb 1994
Fairchild terminates on-site groundwater extraction and treatment	July 1998
Fairchild submits second Five-Year Review Report to RWQCB	Feb 1999
SRDC and APSI develop the property into a retail shopping center	1998 - 2000

### **III. Background**

#### **Physical Characteristics**

The Fairchild San Jose site is located west of Highway 101 about nine miles southeast of downtown San Jose (see attached map). The site is located in a light industrial and commercial area. Most buildings in the vicinity are low-rise developments containing offices, warehouses, and research and development facilities.

One large industrial building formerly occupied the 24-acre site. The site was redeveloped during 1998 to 2000 into a retail shopping center. Groundwater contamination at this site consists primarily of 1,1,1-trichloroethane (1,1,1-TCA) and its breakdown product 1,1-dichloroethene (1,1-DCE), along with other chlorinated and non-chlorinated compounds such as acetone and xylenes. Groundwater contamination from the site formed a plume that migrated about one mile northwestward toward the San Francisco Bay. Offsite contamination was limited to 1,1,1-TCA and 1,1-DCE. The offsite plume has been remediated to below drinking water standards, and contamination is now restricted to a small portion of the site.

#### **Site Operational History**

The Fairchild San Jose site was constructed between 1975 and 1977. The facility was used for electronics and semiconductor fabrication facility from 1977 to 1983. Organic solvents (primarily 1,1,1-TCA) were used for cleaning and degreasing at the facility. Other chemicals were also used and stored at the facility. The site was vacant from 1983 until it was redeveloped and reoccupied in 2000. Fairchild's parent company, Schlumberger, sold Fairchild to National Semiconductor Corporation in 1987, but retained responsibility for site cleanup.

#### **Hydrogeology**

The site is located in the Santa Teresa Basin, a higher elevation, southern extension of the Santa Clara Valley. The Santa Clara Valley is a fault-bounded structural basin filled with marine and alluvial sediments. Alternating layers of coarse and fine deposits result in a heterogeneous sequence of interbedded sands, gravels, silts, and clays. The natural groundwater flow direction beneath the site is to the northwest towards San Francisco Bay. The Santa Teresa Basin is bounded by the bedrock outcrops of Coyote Narrows and Tulare Hill on the southeast, Santa Teresa Hills on the southwest, Edenvale Ridge and Oak Hill on the northwest, and the Diablo Range on the northeast.

The thickness of alluvium in the Santa Teresa Basin ranges from zero at bedrock outcrops to about 400 feet in the basin center. Four distinct water-bearing zones, designated as the "A," "B," "C," and "D" aquifers, have been identified within the alluvium in the vicinity of the site. These transmissive, coarse-grained units are generally composed of sand or sandy gravel. The shallowest water-bearing zone, designated the A-aquifer, is from 10 to 40 feet thick and is first encountered at depths of 10 to 20 feet below ground surface (bgs). The A-aquifer is laterally discontinuous in the offsite area. The B-aquifer is generally located between depths of 60 to 120 feet bgs. The C-aquifer occurs between 150 and 190 feet bgs at the site, and the D-aquifer occurs

at depths greater than 300 feet bgs. There is some degree of hydraulic connection between the zones. The B, C, and D aquifers are laterally continuous, are generally prolific water producers, have very high ambient water quality, and are actively used in the basin as a source of drinking water. Groundwater contamination from the Fairchild site impacted the A, B, and C aquifers. Onsite, contamination was generally restricted to the A and B aquifers, with only trace concentrations of solvents ever discovered in the C aquifer. Offsite, contamination was most pronounced and extensive in the B aquifer and, to a lesser extent, the C aquifer.

### **History of Contamination**

Site remedial investigations were initiated in November 1981. A large underground waste solvent storage tank was found to have failed and caused the groundwater contamination plume. Subsequent remedial investigations confirmed the lateral and vertical extent of contamination.

The main contaminants of concern at the site are 1,1,1-TCA, its breakdown product 1,1-DCE, and 1,4-dioxane, a solvent stabilizer commonly added to 1,1,1-TCA to prevent degradation. Tetrachloroethylene (PCE), Freon 113, xylenes, and acetone have also been detected at the site. 1,1,1-TCA and 1,1-DCE are the only chemicals ever detected in offsite groundwater.

### **Initial Response**

Remedial action at the site began in 1982 with the removal of the leaking tank and associated piping. About 3,400 cubic yards of contaminated soil were excavated from the site. Groundwater extraction was also initiated in 1982 to control contaminant migration. By 1984, Fairchild was extracting 3,300 million gallons of water per year. Fairchild identified and closed all supply wells in the area that were impacted by the pollution plume. In 1986, Fairchild constructed a slurry cut-off wall around the site to further control migration from the source area and to facilitate remediation of VOC “hot spots” within the site boundaries. The slurry wall extended downward through the A and B aquifers. Groundwater extraction and treatment (GWET) continued both inside and downgradient from the slurry wall for several years.

### **Summary of Basis for Taking Action**

The site overlies the Santa Teresa groundwater basin. Groundwater from this basin is of very high ambient quality, and is actively used as a source of drinking water. The Fairchild site was made a Superfund site primarily because past chemical releases at the site impacted this valuable resource and caused supply wells to be taken out of service.

## IV. Remedial Actions

### Remedy Selection

A Public Health Assessment (PHA) for the site was completed in 1988. The RWQCB adopted Final Site Cleanup Requirements (SCR) Order No. 89-16 for the site in January 1989. The Final SCR contains the approved remedy for cleanup at the site. A Record of Decision (ROD) was issued by USEPA in March 1989. The remedy selected in the SCR and the ROD consisted of the following elements:

- 1) soil excavation
- 2) construction of a slurry cut-off wall to confine groundwater extraction
- 3) soil vapor extraction and treatment (SVET)
- 4) treatment of extracted groundwater by air stripping or ozone oxidation
- 5) discharge of treated water under NPDES permit
- 6) institutional controls prohibiting the use of shallow groundwater for drinking water.

The SCR set groundwater cleanup standards at California proposed or adopted Maximum Contaminant Levels (MCLs), USEPA MCLs, California Action Levels, or levels based on a risk assessment. The groundwater cleanup standards set in the 1989 Final Site Cleanup order for the on-site area are as follows:

Chemical	Cleanup Standard (ug/L)
1,1-dichloroethene (1,1-DCE)	6
Freon 113	1,200
tetrachloroethene (PCE)	5
1,1,1-trichloroethane (1,1,1-TCA)	200
xylenes (total)	10,000

For the offsite area, groundwater cleanup levels were set at a 0.25 hazard index for 1,1,1-TCA and 1,1-DCE, the only chemicals that have been detected in offsite groundwater. The hazard index was calculated by summing the hazard associated with each constituent of concern.

### Remedy Implementation

Soil excavation and construction of the slurry wall were complete, and the GWET system and groundwater monitoring program fully implemented, at the time the Final SCR was adopted in 1989.

Groundwater remediation began at the site in 1982, and extraction rates increased rapidly, reaching a peak in 1984. Groundwater extraction from the C aquifer was terminated in 1989, and all offsite pumping ended in 1991. Fairchild received permission from the RWQCB to suspend on-site groundwater extraction and treatment in July 1998 after demonstrating that asymptotic VOC concentrations and other conditions had been reached. During operation of the GWET system between 1982 and 1998 a total of 93,285 pounds of VOCs were removed from groundwater.

An SVET system was operated at the site between 1987 and 1990 to treat vadose-zone soil contamination. The system was permanently shut down and removed in 1995 when Fairchild demonstrated that soil cleanup goals established in the SCR had been achieved. A total of 15,576 pounds of VOCs were removed by SVET.

Another estimated 38,000 pounds of VOCs were removed during soil excavation in 1982. In total, 146,861 pounds of VOCs were removed from the site through soil excavation, groundwater extraction, and soil vapor extraction.

A deed restriction was prepared for the property and recorded with the Santa Clara County Records Office on May 16, 1989. The deed restriction prohibits the use of groundwater from the site for drinking water and restricts excavation below a depth of 20 feet (the approximate depth to the water table).

### **Systems Operation/O&M**

Groundwater extraction was terminated at the site in July 1998. No water was extracted during the 1999 – 2004 review period. Schlumberger continues to submit groundwater monitoring reports on a semiannual schedule.

## **V. Progress Since Last Review**

No remediation has been performed at the site since the last Five-Year review. Contaminant concentrations in the offsite area remain below drinking water standards and below the 0.25 hazard index except for 1,1-DCE, which has been below the MCL (6 ug/L) for over ten years, but sometimes exceeds the chemical-specific hazard index, which is roughly 25% of the MCL.

One potentially toxic chemical, 1,4-dioxane, has been identified during recent monitoring that was not identified as a contaminant of concern at the time of the ROD, and therefore did not have cleanup standards specified in the SCR. The State of California action level for 1,4-dioxane is 3 ug/L. 1,4-dioxane was detected inside the slurry wall at concentrations as high as 850 ug/L. 1,4-dioxane has not been identified in any samples collected from outside the slurry wall.

## **VI. Five-Year Review Process**

### **Document Review**

This five-year review consisted of a review of relevant documents including Fairchild's Ten-Year status report (submitted to the Water Board in February 1999) and semi-annual groundwater monitoring reports.

### **Data Review**

Groundwater monitoring data collected from 1999 to 2004 were reviewed to evaluate groundwater conditions. There is no evidence that groundwater contamination has migrated outside the slurry wall, or vertically inside the wall, since groundwater extraction was terminated.

### **Site Inspection**

A site inspection was conducted on September 1, 2004 by RWQCB staff. The site was redeveloped into a shopping center in 1998 to 2000, and no remedial activities have been conducted during the past five years. The institutional controls that are in place include prohibitions on the use of groundwater and excavation below a depth of 20 feet until cleanup levels are achieved. No activities were observed that would have violated the institutional controls.

## **VII. Technical Assessment**

### Question A: Is the remedy functioning as intended by the decision documents?

The current groundwater monitoring program is believed to be sufficient to detect any contaminant migration beyond the slurry cut-off wall. The remedy selected in the Final Remedial Action Plan (slurry cut-off wall, GWET, SVET, and institutional controls) was implemented as planned and was successful in removing almost 147,000 pounds of VOC mass from groundwater, reducing VOC concentrations in groundwater outside the slurry cut-off wall to below drinking water standards, and confining contamination to the area inside the cut-off wall. Concentrations of 1,1,1-TCA and 1,1-DCE inside the wall are declining slowly over time but remain above applicable cleanup or action levels. These chemicals are primarily found in the B aquifer at depths of 60 feet or more, and therefore are not expected to pose a significant human health risk through the vapor intrusion pathway.

The institutional controls in place include prohibitions on the use of groundwater until cleanup levels are achieved. No activities were observed that would have violated the institutional controls. Any new development at the site will need to adhere to restrictions established in the site deed restriction.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

In an effort to determine whether the remedy at the Fairchild San Jose site remains protective of human health and the environment, this section discusses changes in site conditions, changes in exposure pathways, changes in toxicity values, changes in remedial action objectives, and changes in ARARs since selection of the Site remedy.

*Changes in Site Conditions*

The site was redeveloped and occupied by a commercial shopping complex beginning in 2000. Contamination above drinking water standards no longer extends offsite. The protectiveness of the remedy has not been affected negatively by any changes since the last review period.

*Changes in Exposure Pathways*

A public health assessment (PHA) was conducted for the site in 1988. This risk assessment was used in evaluating and selecting remedial options for the site. The PHA concluded that off-site groundwater was the most likely potential human exposure pathway. Drinking water wells located downgradient of the site were identified in the PHA as the exposure pathway of greatest concern. Because the contamination at the site is primarily in groundwater, the PHA concluded that potential exposure to site contaminants through the inhalation pathway presented negligible risks.

The primary exposure pathway of potential concern related to recent site redevelopment is inhalation of organic vapors migrating into structures built over the former site. Two exposure scenarios were evaluated for this pathway in a supplemental health risk assessment report submitted to the RWQCB in 1995. Occupational exposure was assessed for workers in future offices or retail stores. Residential exposure, although an unlikely scenario, was assessed for potential homes built onsite. Risks associated with these exposure scenarios were found to be within acceptable levels.

Since 1995, the understanding of the fate and transport of chemicals in the subsurface has evolved, with greater concern over the vapor intrusion pathway, particularly at sites with past releases of TCE. Because TCE has not been detected at this site, USEPA identified the Fairchild San Jose site as a low-priority site for evaluating the vapor intrusion pathway. Indoor air at the site has not been sampled for VOCs, but vapor intrusion is not considered to be a significant threat because of the chemicals involved, the depth to contamination (60 feet), and the relatively low concentrations of chemicals in groundwater.

*Changes in ARARs*

The Applicable or Relevant and Appropriate Requirements (ARARs) and cleanup levels for soil contamination at the AMD site have been met in accordance with the Final Site Cleanup Order. There have been no changes in ARARs, affecting operations of the remedy or the protectiveness of the remedy.

The RWQCB has developed risk-based Environmental Screening Levels (ESL) for a variety of exposure routes including vapor intrusion into buildings from underlying groundwater contamination. The current levels of 1,1,1-TCA and 1,1-DCE in groundwater beneath the building are well below the RWQCB's residential screening levels for potential indoor air risk.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

1,4-dioxane has recently been identified as a contaminant in groundwater beneath the site. A maximum contaminant level (MCL) has not been established for 1,4-dioxane, but concentrations in groundwater at the site (up to 850 ug/L) exceed the California action level of 3 ug/L.

The vapor intrusion pathway has not been re-assessed at the site since the 1995 human health risk assessment addendum, but the available data suggests minimal long-term health risk associated with the vapor intrusion pathway due to significant depth to contaminated groundwater and the absence of TCE.

#### Technical Assessment Summary

According to the data reviewed and the site inspection, the remedy is functioning as intended by the ROD. There have been no changes in the physical condition or land use of the site that would reduce the protectiveness of the remedy. Reductions in groundwater concentrations achieved through site remediation have increased the protectiveness of the remedy in reducing exposure to groundwater contamination. The vapor intrusion pathway has not been evaluated at the site, but risks associated with the vapor intrusion pathway are expected to be minimal.

### **VIII. Issues**

Indoor air VOC concentrations have not been monitored at the site. While the potential for human health risk associated with vapor intrusion appears to be minimal, assessment of the vapor intrusion threat by the regulatory agencies is not complete.

### **IX. Recommendations and Follow-up Actions**

RWQCB and USEPA need to further evaluate the vapor intrusion pathway and decide if additional site investigation and risk assessment is necessary.

### **X. Protectiveness Statement**

Remedial actions conducted at the site have greatly reduced contaminant mass and groundwater concentrations. There is no longer an offsite groundwater plume, as contaminant concentrations at all monitoring points outside the site boundary have been below drinking water standards for ten years. Site cleanup goals have not been achieved for all chemicals of concern within the site boundaries, but concentrations inside the slurry cut-off wall at the site have been reduced to levels that no longer pose any human health risk. Groundwater extraction was suspended in 1998. The remedy is currently protective of human health and the environment in terms of limiting ingestion of



contaminated water through the use of institutional controls prohibiting the use of shallow groundwater.

Indoor air has not been sampled at the site. Although risks associated with vapor intrusion are expected to be minimal, RWQCB and USEPA are deferring making a protectiveness statement until an analysis of the risks at this site from the vapor intrusion pathway have been considered further.

## **XI. Next Review**

The next five-year review for the Fairchild San Jose Superfund site is required by September 30, 2009.

**Issues and Recommendations**

<i>Issue</i>	<i>Recommendation and Follow-up Action</i>	<i>Responsible Party</i>	<i>Oversight Agency</i>	<i>Date</i>	<i>Affects Protectiveness (Yes/No)</i>
Indoor air VOC concentrations have not been monitored at the site. While the potential for human health risk associated with vapor intrusion appears to be minimal, assessment of the vapor intrusion threat is not complete.	The regulatory agencies need to further evaluate the vapor intrusion pathway and decide if additional site investigation and risk assessment is necessary	RWQCB/ USEPA	RWQCB	2005	No